

ANNEX NO. 1
BETWEEN
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
LANGLEY RESEARCH CENTER
AND
OLD DOMINION UNIVERSITY
UNDER
SPACE ACT UMBRELLA AGREEMENT SAA1-34376
FOR
VISUAL ATTENTION ALLOCATION AND TRUST IN HUMAN-AUTONOMY
TEAMING

ARTICLE 1. PURPOSE

Annex shall be for the purpose of collaboration between NASA LaRC and Old Dominion University (ODU) to address research needs in the area of human factors as applied to Advanced Air Mobility (AAM). The activities being contemplated consist of experiments, measurements, flight tests, development of data bases and technical reports via collaborative efforts of both NASA LaRC and ODU.

The legal authority for this Annex, consistent with the Umbrella Agreement, is in accordance with the National Aeronautics and Space Act (51 U.S.C. § 20113(e)).

ARTICLE 2. RESPONSIBILITIES

A. NASA LaRC will use reasonable efforts to:

1. Update Human-Autonomy Teaming Task Battery (HATTB) with input from ODU.
2. Conduct human-autonomy teaming studies with ODU.
 - A. Coordinate with ODU for experimental design.
 - B. Share collected data with ODU.
 - C. Co-author at least one conference or journal article based on a study.
3. Pursuant to a separate software use agreement provide initial software release of the Human-Autonomy Teaming Task (HATT) Battery Software to ODU.
4. Coordinate ODU Faculty and Student Visit to NASA LaRC.
5. NASA LaRC to participate in bi-weekly meetings with ODU.

B. Partner will use reasonable efforts to:

1. Conduct human-autonomy teaming studies with NASA LaRC.
 - A. Coordinate with NASA LaRC for experimental design.
 - B. Share collected data with NASA LaRC.
 - C. Co-author at least one conference or journal article based on a study.

.

2. Conduct a small Unmanned Aircraft Systems (UAS) longitudinal live operations study with NASA LaRC.
 - A. ODU to help integrate eye tracking metrics into ground control station suite of human factors metrics.
 - B. ODU to aid in experimental design and literature review.
 - C. ODU to receive de-identified human-performance, subjective, and eye tracking data.
 - D. ODU to co-author Conference/Journal Article with NASA LaRC Lead.
3. Help in concept development for the HATT Battery software.
4. Help evaluate pilot versions of the HATT Battery software.
5. ODU to participate in bi-weekly meetings with NASA LaRC.

ARTICLE 3. SCHEDULE AND MILESTONES

The planned major milestones for the activities for this Annex defined in the "Responsibilities" Article are as follows:

- | | |
|--|--|
| 1. NASA LaRC to update Human-Autonomy Teaming Task Battery (HATTB) with input from ODU (Reference Article 2: A1, B3, B4) | Public Release of HATTB Software (estimated FY24) through two (2) years from Limited Initial Release of HATTB Software (estimated FY22-Q1) |
| 2. NASA LaRC to conduct at least three (2) human-autonomy teaming studies with ODU. (Reference Article 2: A2, B1) | Throughout the period of performance |
| 3. NASA LaRC to complete longitudinal small UAS live operations study with input from ODU (Reference Article 2: B2) | Throughout the period of performance (FY21-FY26) |
| 4. NASA LaRC to provide ODU with an initial limited release of the HATTB (Reference Article 2: A3) | Q1 FY22 |
| 5. NASA LaRC and ODU to participate in bi-weekly meetings (Reference Article 2: A5, B5) | Throughout the period of performance (FY21-FY26) |
| 6. ODU faculty and students to visit NASA LaRC (Reference Article 2: A4) | During the term of Milestone 3 (Longitudinal study) |
| 7. NASA LaRC and ODU to co-author Conference/Journal Articles (Reference Article 2: A2C, B1C, B2D) | Throughout the period of performance (FY21-FY26) |

ARTICLE 4. FINANCIAL OBLIGATIONS

There will be no transfer of funds between the Parties under this Agreement and each Party will fund its own participation. All activities under or pursuant to this Agreement are subject to the availability of funds, and no provision of this Agreement shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, (31 U.S.C. § 1341).

ARTICLE 5. INTELLECTUAL PROPERTY RIGHTS - DATA RIGHTS

A. Data produced under this Annex which is subject to paragraph C. of the Intellectual Property Rights - Data Rights Article of the Umbrella Agreement will be protected for the period of two (2) years.

B. Under paragraph H. of the Intellectual Property Rights - Data Rights Article of the Umbrella Agreement, Disclosing Party provides the following Data to Receiving Party. The lists below may not be comprehensive, are subject to change, and do not supersede any restrictive notice on the Data provided.

1. Background Data: *The Disclosing Party's Background Data, if any, will be identified in a separate technical document.*
2. Third Party Proprietary Data: *The Disclosing Party's Third Party Proprietary Data, if any, will be identified in a separate technical document.*
3. Controlled Government Data: *The Disclosing Party's Controlled Government Data, if any, will be identified in a separate technical document.*
4. The following software and related Data will be provided to Partner under a separate Software Usage Agreement: *The Disclosing Party's software, if any, will be identified in a separate technical document.*

ARTICLE 6. TERM OF ANNEX

This Annex becomes effective upon the date of the last signature below ("Effective Date") and shall remain in effect until the completion of all obligations of both Parties hereto, or five (5) years from the Effective Date, whichever comes first, unless such term exceeds the duration of the Umbrella Agreement. The term of this Annex shall not exceed the term of the Umbrella Agreement. The Annex automatically expires upon the expiration of the Umbrella Agreement.

ARTICLE 7. RIGHT TO TERMINATE

Either Party may unilaterally terminate this Annex by providing thirty (30) calendar days written notice to the other Party.

ARTICLE 8. POINTS OF CONTACT

The following personnel are designated as the Points of Contact between the Parties in the performance of this Annex.

Technical Points of Contact

NASA Langley Research Center

Lisa LeVie
Research AST, Human/Machine Systems
Mail Stop: 233
Langley Research Center
Hampton, VA 23681
Phone: 757.864.3676
lisa.r.levie@nasa.gov

Old Dominion University

Yusuke Yamani
Associate Professor, Department of
Psychology
Mills Godwin Bldg 346X
Norfolk, VA 23508-2559
Phone: 757.683.4457
Fax: 757.683.5087
yyamani@odu.edu

ARTICLE 9. MODIFICATIONS

Any modification to this Annex shall be executed, in writing, and signed by an authorized representative of NASA and the Partner. Modification of an Annex does not modify the terms of the Umbrella Agreement.

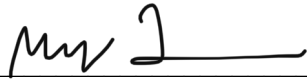
ARTICLE 10. SIGNATORY AUTHORITY

The signatories to this Annex covenant and warrant that they have authority to execute this Annex. By signing below, the undersigned agrees to the above terms and conditions.

NATIONAL AERONAUTICS AND
SPACE ADMINISTRATION
LANGLEY RESEARCH CENTER

OLD DOMINION UNIVERSITY

BY: _____
Mary DiJoseph
Director, Aeronautics Research
Directorate

BY:  _____
Dr. Morris Foster
VP for Research at Old Dominion
University

DATE: _____

DATE: 5 / 3 / 21